

Installing System Maintenance Aid

This section covers the following topics:

- General Information
 - Installing SMA in an existing Adabas/Natural Environment
 - Initial Installation Procedure for SMA
 - Installation Procedure for Migrating from SMA 1.2 to SMA 1.3
 - Installing and Using System Maintenance Aid under VM/CMS
 - Installation Verification
 - Initial Installation of Adabas, Natural and System Maintenance Aid
 - Starter System for VSE/SP
 - Starter System for MVS
 - Starter System for BS2000
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General Information

SMA is an application completely written in Natural, and uses data in an Adabas database.

If Adabas and Natural are not installed, the SMA Starter Systems, which are described later in this section, must be used.

SMA can be installed easily into an existing Adabas/Natural environment.

As a prerequisite, Natural Version 2.3.4 or a later version must be installed.

Installing SMA in an existing Adabas/Natural Environment

The following topics are covered below:

- The Installation Tape
- Copying the Source Dataset to Disk

The Installation Tape

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset	Description
SMA nnn .INPL	Natural programs of SMA
SMA nnn .ERRN	Error messages for SMA
SMA nnn .SYSF	SMA system file
SMA nnn .SRCE	Source library with SMA example jobs (MVS and BS2000)
SMA nnn .LIBJ	Sublibrary with SMA example jobs (VSE only)
SMA nnn .HELP	Help text
SMA nnn .DATA	Contents of the SMA system file in TABS-format (VSE and MVS only)

The notation nnn in dataset names represents the version number of the product.

The dataset type and the space each dataset requires on disk is shown in the Report of Tape Creation.

Copying the Source Dataset to Disk

Copy the source dataset to a disk. This file contains example jobs for the installation steps for SMA itself as well as examples for loading SMA table data from a product tape and for generating JCL with SMA in batch mode.

Example jobs for copying from tape to disk under different operating systems are given in the following sections.

OS/MVS

Use an IEBCOPY job.

```
//... JOB ...
//SRCE EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=SMAnnn.SRCE,DISP=(OLD,PASS),
// VOL=SER=SMAl..,UNIT=TAPE,LABEL=(...,SL)
//OUT DD DSN=...SMAl...SRCE,DISP=(NEW,CATLG,DELETE),
// VOL=SER=.....,UNIT=....,
// DCB=*.IN
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*
//
```

VSE

The library concept for SMA under VSE assumes (at least) one library, which has sublibraries per Software AG product library. In addition to these installation sublibraries, you need a work sublibrary and a sublibrary for initial installation jobs for SMA itself. If you are not already using such a library, it is recommended that you create this library now, with one sublibrary for the object created during Software AG product installation.

The following job creates this library. The size needed for the library depends on the number of products and versions which will be loaded into this library later on; the following example uses 1200 TRK of a 3380 device as a recommended size.

```
* $$ JOB JNM=SMADEF,CLASS=0,DISP=D,LDEST=(,...)
* $$ LST CLASS=A,DISP=D
// JOB SMADEF
// DLBL SAGLIB,'INSTALL.SMALIB',99/365,SD
// EXTENT ,vvvvvv,1,0,nnnn,1200
// EXEC LIBR,PARM='MSHP'
DEFINE LIB=SAGLIB
DEFINE SUB=SAGLIB.USRLIB,REUSE=AUTO,R=Y
/*
/&
* $$ EOJ
```

The job below adds a label for the library created with the previous job to the standard label area. This label will be used as a value for the LIB-GROUP parameter; it is recommended (but not mandatory) value is "SAGLIB".

```
* $$ JOB JNM=STDLABEL,CLASS=A,DISP=D
* $$ LST CLASS=A,DISP=D
// JOB STDLABEL
// OPTION STDLABEL=DELETE
SAGLIB
/*
// OPTION STDLABEL=ADD
// DLBL SAGLIB,'INSTALL.SMALIB'
// EXTENT ,vvvvvv
/*
/&
* $$ EOJ
```

Now copy the sublibrary containing the SMA sample jobs from the tape using the following JCS:

```
* $$ JOB JNM=SMAJOBS,CLASS=O,DISP=D,LDEST=*,SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB SMAJOBS
// ASSGN SYS005,IGN
// ASSGN SYS006,cuu,VOL=Tnnnnn
// MTC REW,cuu
// MTC FSF,SYS006,nn
* Tape positioned at file ?, tape mark nn
// EXEC LIBR,PARM='MSHP'
  RESTORE SUBLIB=SAGLIB.SMAAnnnJ:SAGLIB.SMAAnnnJ
        TAPE=SYS006 -
        LIST=YES -
        REPLACE=NO
/*
// MTC REW,SYS006
/*
/&
* $$ EOJ
```

The notation *nn* represents the file sequence number of SMAAnnn.LIBJ, as shown in the Report of Tape Creation.

BS2000

Use the first dataset on the tape as input to EDT and read the tape using READ:

```
/FILE SMA...SRCE, LINK=EDTSAM,          -
/      BLKSIZE=, RECSIZE=, RECFORM=,      -
/      VOL=SMA... , DEV=T-C1, FSEQ=1, STATE=FOREIGN
EXEC EDT
@READ  '/FILE'
@SY    'REL EDTSAM'
@WRITE 'P.SMA...nnn'
@HALT
```

Now use EDT to adapt and create jobs E.SMAINST and E.JCLGEN, and procedure P.TABLOAD. In these jobs/procedure, replace ## by the specifications valid for your environment.

Then issue the following command:

```
/CALL SMA...nnn, PRODUCT=SMA...nnn
```

Initial Installation Procedure for SMA

Step 1: Load the SMA System File - Job I050, Step 1800

Load the initial SMA data into an Adabas database. You may choose any file number for this loading. Version for ADALOD is 6.

Use the following options in this ADALOD step:

```
USERISN  
ISNREUSE=YES  
VERSION=6  
MAXISN=30000, DSSIZE=200B, NISIZE=200B, UISIZE=100B.
```

Note:

Option USERISN is essential for the correct operation of SMA.

Step 2: Load Natural Objects - Job I061, Step 1800

Load the Natural programs of SMA (SMA nnn .INPL) into the Natural system file using the INPL utility of Natural.

Step 3: Load Error Messages - Job I061, Step 1802

Load the error messages of SMA (SMA nnn .ERRN) into the Natural system file using the ERRLODUS utility of Natural.

Step 4: Specifying Natural Parameters

Whenever you invoke Natural to work with SMA, do either of the following:

- Append the following macro definition:
`NTFILE ID=208,DBID=dbid,FNR=fnr`
 in your Natural parameter module, where *dbid* is your database ID and *fnr* is the file number where you loaded the SMA data file. Then reassemble and relink the Natural parameter module.
- Or use the dynamic parameter
`LFILE=(208,dbid,fnr)`

If you wish to use the JCL generation online, specify the following parameters:

```
DATSIZE=50
ESIZE=64
MADIO=0
MAXCL=0
```

The PRINTER parameter should allow for at least 1 printer in online and 3 printers in batch. If no physical or logical printer is available, set "Printer ID" to DUMMY or blank in the SMA Profile. See SMA Profile in the section Menus and Line Commands for an explanation of this parameter.

Depending on the TP environment under Natural the following specification may also be necessary:

RJESIZE=32

Step 5: Operational Requirements

Adabas Nucleus:

Allow for approximately 500 ISNs to be kept in the hold queue:

```
NH=2000
NI=500
```

Step 6: SMA under Natural Security

When using System Maintenance Aid under Natural Security, the following prerequisites must be fulfilled:

- The library SYSSMA1 must be defined in Natural Security.
- SMA uses the Natural Command Processor, which must also be defined in Natural Security. This can be done with the following actions:
 - Enter Natural Security library maintenance.
 - Modify library SYSSMA1.
 - Select "Additional Options".
 - Select "Functional Security".
 - Enter SMACPROC in the field "Command Processor", and mark the "Keyword default" field. After pressing Enter, the "Functional security defined" should stay on Yes, and "Keyword default" should be allowed.
 - Leave Natural Security.

Installation Procedure for Migrating from SMA 1.2 to SMA 1.3

Using SMA for installing SMA

We recommend to install SMA 1.3 using SMA itself. After performing the LOAD for the delivery tape of SMA13n please make sure that SMA parameters SMA-FIRST-INSTALL in group OPTION is set to N.

Step 1: Load Help Text - Job I082, Step 1800

The help text is loaded from file *SMA_{nnn}.HELP* with the LOAD command. It is recommended that this be performed in batch, using the following input cards:

```
LOGON SYSSMA1  
MENU  
LOAD  
FIN
```

Note:

If (for any reason) migration stops during execution, it can be repeated any time.

Installing and Using System Maintenance Aid under VM/CMS

Although System Maintenance Aid cannot be used to generate install sequences for installing Software AG products under VM/CMS, it can be worthwhile to use SMA itself from within VM/CMS.

In particular this may be the case for VSE system programmers, who use VM/CMS to maintain their VSE systems.

Prerequisites

Adabas version 6.2.3 or above and Natural version 2.3.4 or above must be installed, and running under VM/CMS.

Installation Tapes

Use the SMA tape for your target operating system (i.e., if you want SMA to generate VSE job control), use the installation tape for *SMA_{nnn}* for VSE/SP.

Installation Procedure

The installation procedure for SMA under VM/CMS is the same as described for VSE or MVS. Adapt the EXEC's already being used to perform the various steps.

Usage Hints

Submitting jobs

System Maintenance Aid uses standard NATRJE to submit jobs. Under VM/CMS this just means "punching" to the virtual punching device. Issue the command CP PU TO <machine> before you start Natural.

Note:

<machine> is the name of the virtual machine where your target system (e.g., VSE) is running.

Loading ZAPs

When you issue command LOAD for ZAPs from Software AG, then SMA initially does not know the operating system where the ZAP shall be used. SMA 1.3 will take any operating system which you are using in your SMA environments. (Thus, you should not combine several operating systems, e.g., MVS and VSE in the same system file when running SMA in VM/CMS).

Work file for LOAD

When you do the SMA LOAD from tape you need to issue a FILEDEF command like the following before invoking Natural:

FILEDEF CMWKF01 TAP1 (RECFM FB LRECL 80 BLKSIZE 6000).

Invoking Natural

When performing the INPL and ERRLODUS for SMA, as well as the SMA LOAD, make sure to specify the following parameters for Natural for CMS:

WORK=(OS,OS)

Installation Verification

1. Enter online Natural, by entering the following command:
LOGON SYSSMA1
MENU
A
 2. Adapt the GLOBAL parameters and the SMA profile
 3. Use function "Tabload" from the administration menu to LOAD the TABS data from a Software AG delivery tape
 4. Enter the environment part, issue line command CO (=Copy) for your default environment, in the new environment mark the most current version of ADA to be installed.
 5. Enter the report part, invoke report "P" for the newly created environment, mark for printing.
 6. Submit a batch Natural job, with the following input:
LOGON SYSSMA1
MENU
SET ENV <your-new-environment>
GEN
FIN
 7. Enter online Natural again, the environment section, and issue line command JO to see the jobs generated to install Adabas.
- Note:**
At this point the generation of JCL serves the installation verification test only.

Initial Installation of Adabas, Natural and System Maintenance Aid

If neither Adabas nor Natural is already installed, the SMA Starter Systems can be used. The Starter Systems perform a standardized installation of these two products as well as SMA itself. They create a standardized, but full-function Adabas/Natural environment.

The Starter Systems for OS/MVS and VSE/SP require a number of specifications to be entered by the user. With OS/MVS, these specifications are gathered with a TSO CLIST; with VSE/SP, a program is supplied which performs a dialog via the operator console, and then generates all necessary jobs.

The Starter Systems install an Adabas database, and load Natural (including SMA) into this database. After this process, Natural and SMA can be used in batch mode or in dialog mode.

Note:

This is a standardized installation of Adabas and Natural. It is, however, based on the regular product datasets for Adabas and Natural, and the installation uses the standard installation jobs.

Basic Installation Process for BS2000

The Starter System for BS2000 consists of a "ready-to-use" Adabas database and Natural nucleus. These are supplied on a tape in ARCHIVE format and must only be copied to disk.

For additional information, see the ARCHIVE report which is provided with the installation tape.

Run DEMO.E.STARTADA to start the Adabas nucleus. You may access Natural with procedure DEMO.P.STARTNRT.

Basic Installation Process for OS/MVS and VSE/SP

The installation jobs generated by the Starter Systems perform the following tasks:

- Copy the libraries for Adabas and Natural from the product tape (job SMAI001).
- Install Adabas (Jobs up to SMAI040). This task consists basically of the following sub-tasks:
 - Allocate the files for the database
 - Install the Adabas SVC
 - Format and define the database
 - Start the database nucleus
 - Load the example files
- Install Natural (Jobs SMAI055 to SMAI080). This task basically consists of two parts:
 - The executable modules must be provided. This requires a sequence of assembly and link steps.
 - The Natural objects must be loaded into the Adabas database. This is done using the Natural utility programs INPL and ERRLODUS.
- Inform the "normal" SMA about the installation performed so far (job SMAI999).

Refer to the Adabas Implementation and Maintenance documentation and the Natural Operations for Mainframes documentation for detailed explanations of these installation steps.

Database Space Considerations for OS/MVS and VSE/SP

The Starter Systems ask the user to specify the amount of space to be allocated for the database files. These files will contain the Natural objects of Natural and SMA, as well as possibly other Software AG products, plus user data or user Natural applications.

Therefore, the sizes of these files depend on the amount of user data and programs, and on the number of Software AG products to be loaded into this database.

As a rule of thumb, the following procedure is recommended to estimate reasonable sizes for the files of the Adabas database:

- **DATA:**

Calculate the space requirement in megabytes:

- Assume 15 megabytes as the average space requirement for each major Software AG product, such as, Natural itself, Con-nect, Super Natural, etc. Some products are bigger than this, some are smaller.
- Add the estimated sizes of user data and programs to this value.
- The minimum value to run the generated jobs is 45 megabytes.

Convert this number into the allocation units of your disk.

Here are some figures for special devices:

3350: 1 CYL = 30 TRK = approximately 0.57 megabytes

3375: 1 CYL = 12 TRK = approximately 0.43 megabytes

3380: 1 CYL = 15 TRK = approximately 0.73 megabytes

- **ASSOCIATOR:** For this file, one-third of the DATA space is recommended.
- **WORK:** 20 megabytes.
- **TEMP and SORT:** 7 megabytes each.

You are recommended to put ASSO, DATA and WORK each on different volumes to reduce disk contention.

Note:

Keep in mind that these are just rules of thumb to have reasonable sizes to start with. For more detailed information on space requirements refer to the documentation for Adabas or Software AG courses for database administration.

Starter System for VSE/SP

The following topics are covered below:

- Tape Contents
- Prerequisites
- Preparation
- Installation Steps
- Messages

Tape Contents

For a first-time installation with the SMA Starter Tape, you need one tape with the following contents:

- product datasets for the products Adabas, Natural, Natural CICS Interface, and SMA.
- a LIBR backup of the SMA starter system library.

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Description
SMA ⁿⁿⁿ .INPL	INPL dataset
SMA ⁿⁿⁿ .ERRN	Error messages file
SMA ⁿⁿⁿ .SYSF	DOS system file
SMA ⁿⁿⁿ .DATA	Contents of DOS SMA system file in TABS-format
SMA ⁿⁿⁿ .HELP	Help text
SMA ⁿⁿⁿ .LIBJ	LIBR backup of SMA library
SMA ⁿⁿⁿ .MIGR	Changed skeletons
SSD ⁿⁿⁿ .LIBR	LIBR backup of starter library

Prerequisites

The following prerequisites and restrictions apply:

- Only VSE/SP2 or higher is supported.
- VSE/POWER must be installed.
- Com-plete (version 5.1 or above) or CICS (version 1.7 or above) must be installed.
- Only the R1-extents of ASSO, DATA, WORK, TEMP and SORT are supported.
- The different files of the database can be distributed over different volumes, but each of them must fit on a single volume.
- User-defined block sizes are not supported.
- Your system should be set up so that unwanted parallel execution of the generated jobs is avoided. If VSE/POWER Shared Spooling is installed, ensure that CLASS=0 is activated in exactly one participating VSE system.

Preparation

This section gives a detailed list of preparatory actions and considerations:

- Allocate and define the Software AG product library. This library will be used for SMA and for all products and their different versions that you will receive from Software AG. Approximately 60 megabytes or 1200 tracks of a 3380-type DASD is a reasonable size for this library.

```

      * $$ JOB JNM=SMADEF,CLASS=0,DISP=D,LDEST=( , . . . )
* $$ LST CLASS=A,DISP=D
// JOB SMADEF
// DLBL SAGLIB, 'INSTALL.SMALIB',99/365,SD
// EXTENT ,vvvvvv,1,0,nnnn,1200
// EXEC LIBR,PARM='MSHP'
DEFINE LIB=SAGLIB
/*
/$
* $$ EOJ

```

- Add the label SAGLIB for this library to the standard label area.

```

      * $$ JOB JNM=STDLABEL,CLASS=A,DISP=D
* $$ LST CLASS=A,DISP=D
// JOB STDLABEL
// OPTION STDLABEL=DELETE
SAGLIB
/*
// OPTION STDLABEL=ADD
// DLBL SAGLIB, 'INSTALL.SMALIB'
// EXTENT ,vvvvvv
/*
/&
* $$ EOJ

```

- Prepare a 1 MB (minimum) partition to be used for the Adabas nucleus.
- Provide 300 contiguous tracks or 3000 blocks (if an FBA device is used) of disk space for work datasets.
- Provide Adabas disk space.
- Provide 5 consecutive logical units (for example, SYS030 to SYS034).

- **CICS only:**

- Add the following definitions:

```

DFHPPT TYPE=ENTRY,PROGRAM=NCnnnXX,
      PGMLANG=ASSEMBLER,RES=YES,RSL=PUBLIC
DFHPPT TYPE=ENTRY,PROGRAM=NATnnnSH,
      PGMLANG=ASSEMBLER,RES=YES,RSL=PUBLIC
DFHPPT TYPE=ENTRY,PROGRAM=NCnnnCB,
      PGMLANG=ASSEMBLER,RSL=PUBLIC
DFHPPT TYPE=ENTRY,PROGRAM=NCIXCALL,
      PGMLANG=ASSEMBLER,RSL=PUBLIC
DFHPPT TYPE=ENTRY,PROGRAM=NCIZNEP,
      PGMLANG=ASSEMBLER,RSL=PUBLIC
DFHPPT TYPE=ENTRY,PROGRAM=ADABAS,RES=YES
DFHPCT TYPE=ENTRY,TRANSID=Nnnn,
      DTB=YES,
      TWASIZE=128,
      CLASS=SHORT,PROGRAM=NCnnnXX,
      RESTART=NO
DFHPCT TYPE=ENTRY,TRANSID=NMSG,
      DTB=YES,
      TWASIZE=128,
      CLASS=SHORT,PROGRAM=NCnnnXX,
      RESTART=NO
DFHFCT TYPE=FILE,
      FILE=NCnnnR1,
      ACCMETH=VSAM,
      RECFORM=(FIXED,BLOCKED),
      SERVREQ=(ADD,UPDATE,DELETE),
      FILSTAT=(ENABLED,OPENED),
      BUFND=5,STRNO=3
DFHFCT TYPE=FILE,
      ACCMETH=VSAM,
      FILE=CMEDIT,
      FILSTAT=(ENABLED,OPENED),
      LSRPOOL=NONE,
      RECFORM=(FIXED,UNBLOCKED),
      RSL=PUBLIC,
      SERVREQ=(ADD,UPDATE,DELETE),
      STRNO=4

```

where *nnn* represents the Natural version which is being installed.

- Concatenate <saglib>.USRLIB to the LIBDEF chain of CICS startup JCL.
- CICS storage requirements:
740 KB program storage
530 KB partition GETVIS

- **Com-plete only:**

- Supply the following procedures:
COMFILES for all Com-plete datasets
COMLIBS for all Com-plete libraries.

Installation Steps

For the installation, execute the following steps:

Step 1: Mount SMA Starter Tape

Mount the SMA starter tape on the tape drive.

Step 2: Define Sub-directories

Define two sublibraries in the Software AG product library and restore sub-library SMA from this tape:

```
* $$ JOB JNM=SMALIBR,CLASS=0,DISP=D
* $$ LST CLASS=A,DISP=H
// JOB SMALIBR
// ASSGN SYS006, cuu                (assign physical tape unit)
// MTC REW, SYS006
// MTC FSF, SYS006, nn              (assign tape mark off SSDnnn.LIBR)
// EXEC LIBR
  DEFINE S=SAGLIB.SMA REUSE=IMMEDIATE
  DEFINE S=SAGLIB.USRLIB REUSE=IMMEDIATE
  RESTORE S=SAGLIB.SMA:SAGLIB.SMA -
  TAPE=SYS006 R=Y
/*
```

Note:

where *nn* stands for the number of tape files to be skipped. Please refer to the Report of Tape Creation for this number.

Step 3: Start SMASTART

Start job SMASTART from SAGLIB.SMA. This job collects all the data needed for the installation per dialog via the operator console.

Most of the console messages are self-explanatory; refer to Messages later in this section for detailed explanations of all prompting messages and possible responses.

The following commands are valid responses to all prompts:

Command	Meaning
EOJ	Finish the Starter System without generating jobs
RESTART	Restart the Starter System from the beginning
CANCEL	Cancel the Starter System without dump
CANCEL,DUMP	Cancel the Starter System with dump

Job SMASTART will display the message "NOW GENERATING JOB SMA..." for all generated installation jobs. These jobs are written to the reader queue.

Step 4: Start SMALIBR

Job SMALIBR will start automatically after job SMASTART. This job catalogs all generated jobs in SAGLIB.SMA.

If you want to use these catalogued jobs you have to edit them first:

- change all "%%" to "\$\$";
- change all "C%TAL" to "CATAL";
- change all "B%END" to BKEND".

Step 5: Follow the instruction jobs SMAP...

Jobs "SMAP..." are not to be executed but contain instead comments which must be followed before submitting the SMAI... jobs.

Step 6: Run the installation jobs SMAI...

Release all generated jobs SMAI... in the order indicated by the job names. All jobs were generated for job CLASS=0.

The job SMAI005 must be modified before releasing, so that correct information for the CICS threads is generated.

Note:

Special care must be taken with job SMAI040, the Adabas nucleus, since this job remains active permanently. Change the class of this job when releasing it, according to the partition you prepared for Adabas.

- Com-plete only:
Catalog program NATnn.
- CICS only:
Re-start CICS. After CICS is up again, start Natural using transaction code Nnnn.

Messages

All messages sent by the DOS Starter System have the form:

SMA*nnnx*, where: SMA is the error identifier;

nnn indicates the error number;

x is one of the following message types:

I information only

R outstanding reply

E error message

SMA900I Software AG's INSTALLATION PROCEDURE IS RUNNING

Explanation Informs about the beginning of the installation procedure.

Action This message is for your information only. No action required.

SMA920R--> ENTER THE ADABAS SVC NUMBER (*nnn*)

Explanation The SVC number is needed for the Adabas utility ADASIP and for all ADARUN cards. This message follows message SMA022I.

Action Refer to message SMA022I and enter either the proposed SVC number or any other unused SVC number between 31 and 120, or "GO" to display the next unused SVC number.

SMA921E NO UNUSED SVC AVAILABLE

Explanation The installation procedure tried to find an unused SVC at startup time, but it did not find any unused SVC in the range from 31 to 120.

Action The installation procedure is abended with dump. Save the dump and contact Software AG technical support.

SMA922I FIRST UNUSED SVC IS nnn

Explanation This message informs you about the first unused SVC greater than 30 found in the SVC table. This number should be used as input for message SMA020R.

Action This message is for your information only. No action required.

SMA923E SVC NUMBER MUST BE BETWEEN 31 AND 120

Explanation According to the Adabas documentation, the SVC number must be between 31 and 120.

Action Verify and correct the input.

SMA924E SVC IS ALREADY IN USE

Explanation The SVC number entered is different from the number proposed by message SMA022I and is already in use.

Action Verify and correct the SVC number.

SMA925R--> ENTER STARTING NUMBER FOR 5 LOGICAL UNITS

Explanation Five logical units are required for installing Adabas (for example, SYS030 to SYS034).

Action Enter the number of the first logical unit and ensure that the next 4 logical units are available.

SMA926E LU NUMBER MUST BE NUMERIC BETWEEN 10 AND 256

Action Verify and correct your input.

**SMA930R--> ENTER 'ADABAS PHYSICAL OR PSEUDO DEVICE,
VOLSER,START-TRK,NR-OF-TRK' FOR XXXXXX**

Explanation xxxxxx is replaced with one of ASSOR1, DATAR1, WORKR1, TEMPR1 or SORTR1. This data is needed to build valid EXTENT cards for each of the database components, and to build valid parameters and ADARUN cards for Adabas utilities.

Action Enter at least 4 positional parameters.
For more information on the Adabas device type, refer to the Adabas Operations documentation

SMA931E COMMA EXPECTED AT POS. 7 OF INPUT

Explanation The first positional parameter must have 6 characters followed by a comma. All parameters must be separated by commas.

Action Verify and correct the input line.

SMA932E AT LEAST ONE POSITIONAL PARAMETER MISSING

Explanation One of the first three parameters is missing.

Action Verify and correct the parameters. All parameters must be separated by comma.

SMA934E UNKNOWN VOLUME SERIAL NUMBER

Explanation The program did not find the volume serial number (first parameter) in your system.

Action Verify and correct the first parameter.

SMA937E START-TRK NOT NUMERIC

Explanation The second positional parameter does not contain a numeric value.

Action Verify and correct the second parameter.

SMA938E START-TRK IS NOT ON CYLINDER BOUNDRY ENTER 'YES' TO CONFIRM THE ABOVE DATA

Explanation The second positional parameter does not match Adabas restrictions. For FBA disks and artificial device numbers, this warning message can be ignored by replying YES. To verify your input refer to the Adabas Implementation documentation.

Action All Adabas components must start at cylinder boundary.

SMA939E NR-OF-TRK NOT NUMERIC

Explanation The third positional parameter does not contain a numeric value.

Action Verify and correct the third parameter.

SMA940E NR-OF-TRK IS NOT A MULTIPLE OF TRK/CYLINDER ENTER 'YES' TO CONFIRM THE ABOVE DATA

Explanation The third positional parameter does not match Adabas restrictions.

Action Verify the third parameter. All Adabas components must end at cylinder boundary. For FBA disks and artificial device numbers, this warning message can be ignored by replying YES. To verify your input refer to the Adabas Implementation documentation.

SMA941E NR-OF-TRK EXCEEDS DEVICE CAPACITY

Explanation The database component does not fit on the specified volume.

Action Verify and correct the parameters.

SMA942E OVERLAP ON xxxx-EXTENT

Explanation One database component overlaps another. xxxx specifies the overlapped component.

Action Verify and correct the parameters.

SMA943I UNIDENTIFIED FBA DEVICE. 3370 ASSUMED

Explanation The device type of the disk is not known to SMA. SMA will assume a 3370 device.

Action Check the generated EXTENT cards.

SMA945R--> ENTER PROCEDURE NAME FOR ADABAS FILES

Explanation A JCL procedure containing the DLBL statements for the files of the Adabas database will be generated later.

Action Enter the name of this procedure. Please make sure that no procedure with this name already exists.

SMA946R--> ENTER TP MONITOR FOR Natural (CICS/COM/BOTH)

Explanation The Starter System generates a Natural/CICS or a Natural/Com-plete environment or both.

Action Enter CI, CO or BO.

SMA947E UNSUPPORTED TP MONITOR

Explanation Supported TP monitors are CICS or Com-plete.

Action Enter CI, CO or BO.

SMA956R--> ENTER VOLSER OF PRODUCT TAPE

Action Enter the volume serial name of your SMA starter tape.

SMA958R--> ENTER 'VOLSER,START-TRACK' PUNCH DATASETS

Explanation The generated jobs need 2 workspaces.

Action Enter the volume serial name of a disk with at least 300 contiguous tracks of space.

SMA960R--> ENTER NAME (LLL.SSS) OF CICS LIBRARY

Explanation The generated jobs need the CICS library for invoking DFHEAP and assembling Natural CICS components.

Action Enter the name of the CICS library (for example PRD.BASE).

SMA961R--> ENTER NAME (LLL.SSS) OF COMPLETE LIBRARY

Action Enter the name of the Com-plete sublibrary. This library will be used for Com-plete macros and modules.

SMA963R--> ENTER NAME OF SAG PRODUCT LIBRARY

Explanation The Software AG (SAG) product library needs a label name.

Action Enter the label name (e.g., SAGLIB).

SMA964R--> ENTER VIRTUAL DEVICE ADDRESS (CUU) FOR TAPE

Action Enter the virtual device address to be used for reading the product tape (for example, 181).

SMA965R--> ENTER LIBRARY-NAME (LLL.SSS) FOR SLI BOOKS

Explanation During the installation of the Natural CICS components a member is copied into the SLI library and the power command * \$\$ SLI MEM=... is used.

Action Enter the name of the sublibrary for SLI books.

SMA970R--> ENTER UNIT-NUMBERS FOR 'SYSIPT, SYSPCH'

Explanation SYSIPT and SYSPCH will be reset at the end of the installation jobs.

Action Enter the unit numbers in the form aaa,bbb where aaa and bbb are hexadecimal numbers.

SMA971E INPUT MUST BE IN FORMAT 'HHH,HHH'

Explanation Two three digit hexadecimal numbers separated by a comma must be specified.

Action Supply input in the correct format.

SMA990I NOW GENERATING JOB jobname

Explanation The system informs you about the start of job generation. In parallel a protocol is printed containing the console dialog and each generated job.

Action None.

SMA991E INTERNAL ERROR DURING JCL-PREPARATION

Explanation Internal error. The installation procedure has abended.

Action Contact Software AG technical support.

SMA992E INTERNAL ERROR: UNEXPECTED ERROR FROM GETVIS

Explanation Internal error.

Action The installation procedure is abended with dump. Save the dump and contact Software AG technical support.

SMA995E INTERNAL ERROR DURING JOB SEGMENTATION

Explanation The punch output of this procedure is separated into several POWER jobs. The SEGMENT macro returned a code different from zero.

Action The installation procedure is abended with dump. Save the dump and contact Software AG technical support.

SMA999I ALL JOBS SUCCESSFULLY GENERATED

Explanation The system informs you about the end of job generation.

Action None.

Starter System for MVS

The following topics are covered below:

- General Considerations
- Preparation
- Libraries
- Job Generation
- Installing without TSO/ISPF

General Considerations

For a first-time installation under MVS/TSO, you need a Software AG SMA product tape containing:

- SMTnnn.TABS as first dataset
- delivery files for Adabas
- delivery files for Natural
- delivery files for the Natural TP Monitor interface
- delivery files for SMA
- library SMAnnn.CLST

Verify the tape contents using the Report of Tape Creation which accompanies the tape.

The Starter System CLIST requires TSO and ISPF. If these systems are not available at your site, refer to Installing without TSO/ISPF later in this section.

Preparation

Decide upon the TP monitor to be used as the target of the initial installation. The options are Com-plete, TSO, and CICS (version 1.7 or later).

This TP monitor must be installed before using the SMA Starter System. The SMA Starter System does not install Com-plete on its own, but it can install Adabas, Natural, and SMA under Com-plete.

Provide empty disk space for the database and the libraries; for the database see Database Space Considerations earlier in this section. For libraries approximately 45 megabytes (60 cylinders of a 3380 device) will be required.

Inspect your product tape for the dataset SMAnnn.CLST, and copy this dataset onto your disk, using a job like the following:

```
//... JOB ...
//SRCE EXEC PGM=IEBCOPY
//IN      DD DSN=SMAnnn.CLST,DISP=(OLD,PASS),
//          VOL=SER=Tmmmmmm,UNIT=TAPE,LABEL=(?,SL)
//OUT     DD DSN=<hlq>.SMAnnn.CLST,DISP=(NEW,CATLG,DELETE),
//          VOL=SER=vvvvvv,UNIT=3380,
//          DCB=*.IN,
//          SPACE=(TRK,(5,5,10))
//SYSPRINT DD SYSOUT=*
//SYSIN   DD *
COPY INDD=IN,OUTDD=OUT
/*
//
```

Libraries

The SMA Starter System for MVS uses the following libraries:

- **<hlq>.SMA_{nnn}.CLST**
This is the source library for the SMA Starter System, which will not be changed during job generation or installation. It contains the CLIST as well as maps and input for the CLIST.
- **<JCL library>**
The CLIST will write the generated jobs as well as a member containing the user's parameter values to this library. The library can have any name; if it does not exist during execution of the CLIST it will be allocated. If JCL generation using the CLIST is repeated for any reason, the same <JCL library> can be used (in this case, the previous parameter values are kept), or a new one can be used.
- **<Prodlib>.<DSN tape>**
One of the parameters prompted by the CLIST is the high-level qualifier for product libraries. This value will be concatenated with the names of the product libraries from the tape to create the dataset name on disk for the copies of the product libraries. These libraries will be allocated by the generated jobs.
- **<Prodlib>.SAG.SMASRCE and <Prodlib>.SAG.SMALOAD**
The same high level qualifier is used for work libraries which are used by the installation jobs to store the created source and load modules. These libraries are allocated by the Starter System.

Example:

If SAGLIB is used as a high-level qualifier the following libraries result:

SAGLIB.SMA _{nnn} .SRCE	Source library unloaded from tape
SAGLIB.SMA.JOBS	Source library for jobs generated by the CLIST
SAGLIB.SAG.SMASRCE	Source library for members generated by the jobs from SAGLIB.SMA.JOBS
SAGLIB.SAG.SMALOAD	Load library for members generated by the jobs from SAGLIB.SMA.JOBS
SAGLIB.ADA _{nnn} .SRCE	Product libraries copied from tape.
SAGLIB.ADA _{nnn} .LOAD	
SAGLIB.NAT _{nnn} .LOAD	

Job Generation

Perform the following steps:

Step 1: Enter Command Mode and Invoke the CLIST

Enter ISPF, TSO Command Mode. Invoke the CLIST MENU from the source library that you just copied:

EX '<hlq>.SMAnnn.CLST(MENU)'

- The CLIST requests the name of the source library from which it was called; re-enter <hlq>.SMAnnn.CLST. (This is necessary because in the CLIST language it is not possible to find out the library from which the CLIST was called.)
- The next screen asks you for the name of the job library. If the library does not exist, you must enter the allocation parameters in this screen.

Step 2: Environment Parameters

Choose "Function 1: Parameters for Adabas and Natural" from the Main Menu. This function allows you to enter Adabas, Natural and environment parameters. After entering your values you may leave the map with the END function, which is normally PF3.

- Adabas SVC number: Check whether the suggested value is a free SVC number in your system. If it is not, change this value accordingly.
- Database ID number: You should keep this value (001); but other numbers up to 254 are possible.
- Maximum number of files: Enter the expected maximum file number in your database. The installation will use the following file numbers:

File	Number
Adabas checkpoint file	1
Adabas example file employees	4
Adabas example file vehicles	5
Adabas example file miscellaneous	6
Natural system file FNAT	8
Natural system file FUSER	9
SMA system file	19

- MVS/XA or ESA: Enter "Y" if you are using MVS/XA or MVS/ESA; enter "N" if you are using an earlier MVS version.
- Permanent SVC: Enter "Y" if you want to install the Adabas SVC permanently.
- Temporary SVC: Enter "Y" if you want to install the Adabas SVC temporarily.

Note:

A temporarily installed SVC is valid immediately until the next system IPL, whereas a permanently installed SVC will only take effect after the next IPL of your operating system. Thus, you are recommended to perform both SVC installations at this point.

- Work unit volume serial number: This value will be used in all assembly and link steps for temporary work datasets.
- Install for CICS (Y/N): Enter "Y" if you want the install steps for Natural under CICS to be generated.
- Install for TSO (Y/N): Enter "Y" if you want the install steps for Natural under TSO to be generated.
- Install for Com-plete (Y/N): Enter "Y" if you want the install steps for Natural under Com-plete to be generated.

Note:

At least one of these TP monitors must be selected.

- Job Line1 to Line3: You may edit the standard JOB statement to be used in all generated jobs. You may use the variable §JNR in the name field of the job card. This variable will be expanded to a 4-character job ID (for example, I050, P010) corresponding to the member name of the generated job. Take care not to exceed the maximum length of the name field if you use this facility.

Step 3: Parameters for Dataset Allocation

Choose "Function 2: Parameters for Dataset Allocation" from the Main Menu. This function allows you to enter parameters for database allocation and product libraries.

- High-level qualifier for database files: The names of the files for the database will be concatenated using this value and standard extensions.
Example: If you choose SAG.DB001, the seven files will be named:
SAG.DB001.ASSOR1
SAG.DB001.DATAR1
SAG.DB001.WORKR1
SAG.DB001.TEMPR1
SAG.DB001.SORTR1
SAG.DB001.PLOGR1
SAG.DB001.PLOGR2
- High-level qualifiers for product libraries: see Libraries earlier in this section.
- Device/Primary Allocation/Volume: Specify the allocation parameters for the files of the database and for the product libraries. The sizes suggested on the screen are valid for 3350 and 3380 devices.

Note:

To check the values specified, the CLIST will allocate and deallocate the library files as soon as the sizes have been entered.

Step 4: Generate the Installation Jobs

Choose function 3 from the Main Menu. The installation jobs are now generated and written into the library that you specified.

Step 5: Execute the Installation Jobs

Exit the CLIST by entering "." (a period), and enter the TSO editor. Inspect the generated jobs and submit them in the order indicated by their numbers.

If you are installing Natural under TSO:

- Include the library `ADAnnn.LOAD` in the STEPLIB DD cards for the TSO procedures that you are using. This library was copied from tape to disk in the first generated installation job.
- The REGION size must be at least 2000KB.

If you are installing Natural under Com-plete:

- Follow the instructions given in section Natural under Com-plete in your Natural Operations documentation.

If you are installing Natural under CICS:

- Add the following definitions:

```
DFHPPT TYPE=ENTRY, PROGRAM=NCnnnRE
```

```
DFHPCT  TYPE=ENTRY,PROGRAM=NCnnnRE,TRANSID=NAT2,TWASIZE=128
```

```
DFHPPT  TYPE=ENTRY,PROGRAM=NCnnnT1,RES=YES
```

(NCnnnT01 for NAT22)

```
DFHPPT TYPE=ENTRY,PROGRAM=NCnnnT2,RES=YES
```

(NCnnnT02 for NAT22)

```
DFHPPT TYPE=ENTRY,PROGRAM=NCnnnCB,RES=YES
```

```
DFHPPT  TYPE=ENTRY,PROGRAM=NCnnnBP,RES=YES
```

DFHPPT TYPE=ENTRY,PROGRAM=ADABAS,RES=YES

where *nnn* represents the Natural version which is being installed.

- Concatenate <prodlib>.SAG.SMALOAD to the STEPLIB of the CICS startup JCL.

Step 6: Invoke Natural

After successful execution of the generated jobs, Natural can be invoked.

If you are using TSO:

- Enter TSO command mode.
- EX '<Prodlib>.SAG.SMASRCE(Natural)'

If you are using CICS:

- Enter CICS.
- Enter the Natural transaction NAT2.

Note:

Job SMAI040 (the Adabas nucleus) must remain active during operation of Natural.

Within Natural, enter SMA via:

```
LOGON SYSSMA1  
MENU
```

Installing without TSO/ISPF

If TSO/ISPF is not available at your site, the JCL generation Steps 1 to 5 are not applicable. You may proceed as follows:

1. Print member XDPARMS from the source library.
2. Modify the jobs SMAIxxx according to your requirements:
 1. Scan for & and replace the variables by your current parameter values.
 2. Scan for § and replace each § by an &.The printout of XDPARMS may help you in this process.
3. Submit the jobs SMAIxxx in numerical sequence indicated by the job names.

Starter System for BS2000

The following topics are covered below:

- Starter System Tape
- Installing the Starter System
- Information on the Initial Environment

Starter System Tape

The Starter System tape is available for customers who have no Adabas/Natural environment. The tape contains an Adabas database and an executable Natural system.

Note:

The product files of Adabas and Natural are not part of the Starter System. These files are contained on the product delivery tape.

The Starter System tape contains the following files (see also the archive report delivered with the tape):

File	Contents
ADA100.ASSO	Database file
ADA100.DATA	Database file
ADA100.WORK	Database file
ADA100.TEMP	Database file
DEMO.E.STARTADA	Job which starts the Adabas nucleus
DEMO.ADALNK.PARMS	ADALNK parameters
DEMO.P.STARTNRT	Procedure which starts TIAM Natural
DEMO.NRTPHSE	TIAM Natural phase
DEMO.NATPHSE	Batch Natural phase
DEMO.ADA _{nnn} .MOD	Adabas module library
DEMO.NAT _{nnn} .MOD	Natural module library
DEMO.ENVMOD	Module library containing the reentrant part of Natural
DEMO.E.STARTCMP	Job which starts Natural common memory pools
DEMO.E.JCLGEN	Job to generate installation JCL using SMA
DEMO.P.TABLOAD	Procedure to load SMA tables into SMA
DEMO.JOBLIB	LMS library containing all jobs which were used to install this environment

Installing the Starter System

1. Allocate disk space for the database.

For the Starter System, disk space of approximately 70.000 PAM pages is required. Usually, the database files are allocated on private disks. Use the following statements for allocating disk space:

```
/FILE ADA100.ASSO,SPACE=5376 ,VOL=.....,BLKSIZE=(STD,1),DEV=.....
/FILE ADA100.DATA,SPACE=26112,VOL=.....,BLKSIZE=(STD,2),DEV=.....
/FILE ADA100.WORK,SPACE=1920 ,VOL=.....,BLKSIZE=(STD,2),DEV=.....
/FILE ADA100.SORT,SPACE=1536 ,VOL=.....,BLKSIZE=(STD,2),DEV=.....
/FILE ADA100.TEMP,SPACE=1536 ,VOL=.....,BLKSIZE=(STD,2),DEV=.....
```

2. Copy the files from tape to disk.

The Starter System tape was created by ARCHIVE. To copy the tape contents to disk proceed as follows:

```
/EXEC $ARCHIVE
FILES NAME=( $SMAGEN.ADA100. )
FILES NAME=( $SMAGEN.DEMO. )
IMPORT DEVICE=dev, FROM=( SSSnnn )
END
```

3. Start the Adabas nucleus and TIAM Natural.

```
/E DEMO.E.STARTADA
/DO DEMO.P.STARTNRT
```

Information on the Initial Environment

The Adabas/Natural system you copied from tape to disk also contains an operable System Maintenance Aid version. You can use this SMA for information on the parameter settings of the initial environment:

- Logon to the Natural application SYSSMA1.
- Enter MENU.
- Choose option R (for Reports).
- Select report E (for environment DB100).